AMENDMENTS

In the Claims

1.   (**Currently Amended**) A network device comprising:
a tunnel classification stage**, wherein**

       said tunnel classification stage comprises

           a packet processing section,

           a security group identifier identification unit, coupled to said packet processing section, and

           a tunnel classification unit, coupled to said packet processing section and said security group identifier identification unit,

       said packet processing section is configured to classify a packet based on a security group identifier (SGI) of said packet, and

       said packet processing section is further configured to forward said packet through a tunnel via which said packet is to be forwarded, and

       said packet processing section is further configured use said SGI in determining said tunnel.

2.-3.   (**Cancelled**)

4.   (**Currently Amended**) The network device of claim [[3]] 1, wherein
said packet processing section is further configured to forward said packet through said
tunnel based on information in a header of said packet.

5.   (Cancelled)

6.   (**Currently Amended**) The network device of claim 1, wherein a <u>single</u> router comprises said tunnel classification stage.

7.   (**Currently Amended**) The network device of claim 6, wherein said <u>single</u> router further comprises:

a lookup unit.

8.   (**Currently Amended**) The network device of claim 7, wherein said lookup unit comprises:

an access control list (ACL); and

a content-addressable memory, wherein

said content-addressable memory is coupled to <u>access</u> said access control list, and

said content-addressable memory is configured to

generate an index, and [[to]]

provide said index to said ACL.

9.   (**Currently Amended**) The network device of claim 8, <u>wherein</u>

<u>said network device further comprises a memory,</u>

<u>said ACL is stored in said memory,</u>

<u>said content-addressable memory and said memory are coupled to one another,</u>

said ACL comprises[[:]] a plurality of ACL entries (ACEs), ~~wherein~~ <u>and</u>

each of said ACEs comprises a tunnel identifier field and a security group identifier field.

10.   (**Currently Amended**) A method comprising:

assigning a security group identifier (SGI) to a packet; [[and]]

classifying said packet based on said SGI<u>;</u>

<u>determining a routing of said packet, wherein said determining is based on said</u>

<u>SGI; and</u>

<u>forwarding said packet via a tunnel identified by said routing, if forwarding a</u>

<u>packet having said SGI via said tunnel is permitted.</u>

11.   (Original) The method of claim 10, further comprising:

determining whether said packet can be sent via a tunnel based on a result of said
classifying said packet.

12.-13. (Cancelled)

14.   (Original) The method of claim 11, wherein said determining comprises:

generating an index, wherein said index comprises said SGI; and

using said index to access an access control list (ACL), wherein said ACL includes
information as to whether said packet can be sent via a tunnel.

15.   (Original) The method of claim 14, wherein said information comprises:

an SGI field; and

a tunnel identifier field.

16.   (Original) The method of claim 10, further comprising:

forwarding said packet from an ingress router to an egress router via a tunnel.

17.   (Original) The method of claim 16, further comprising:

receiving said packet at said egress router; and

determining whether said packet can be forwarded by said egress router based on said
SGI.

18.   (Original) The method of claim 17, wherein said determining whether said packet
can be forwarded further comprises:

determining whether said packet can be forwarded by said egress router based on said
SGI, a destination of said packet and an identifier of said tunnel.

19.   (Original) The method of claim 17, wherein said determining whether said packet
can be forwarded further comprises:

generating an index into an access control list (ACL), wherein

said ACL comprises information regarding whether said packet can be forwarded
by said egress router, and

said index includes said identifier of said tunnel; and

accessing said ACL using said index.

20. **(Currently Amended)** A computer system comprising:

a processor;

computer readable **storage** medium coupled to said processor; and

computer code, encoded in said computer readable **storage** medium, configured to cause
said processor to:

assign a security group identifier (SGI) to a packet; and

generate a classification of said packet by virtue of being configured to
classify said packet based on said SGI**;**

**determine whether said packet can be sent via a tunnel based on said
classification; and**

**forward said packet via said tunnel, if forwarding a packet having said SGI
via said tunnel is permitted.**

21. **(Cancelled)**

22. **(Currently Amended)** The computer system of claim [[21]] **20,** wherein said
computer code is further configured to cause said processor to:

determine a routing of said packet, wherein said classification is also based on said
routing.

23. **(Cancelled)**

24. **(Currently Amended)** The computer system of claim [[21]] **20,** wherein said
computer code configured to cause said processor to determine is further configured to cause
said processor to:

generate an index, wherein said index comprises said SGI; and

use said index to access an access control list (ACL), wherein said ACL includes

information as to whether said packet can be sent via a tunnel.

25.   (Original) The computer system of claim 24, wherein said information comprises:

an SGI field; and

a tunnel identifier field.

26.   (Original) The computer system of claim 20, wherein said computer code is further configured to cause said processor to:

forward said packet from an ingress router to an egress router via a tunnel.

27.   (Original) The computer system of claim 26, wherein said computer code is further configured to cause said processor to:

receive said packet at said egress router; and

determine whether said packet can be forwarded by said egress router based on said SGI.

28.   (Original) The computer system of claim 27, wherein said computer code configured to cause said processor to determine whether said packet can be forwarded by said egress router is further configured to cause said processor to:

determine whether said packet can be forwarded by said egress router based on said SGI,

a destination of said packet and an identifier of said tunnel.

29.   (Original) The computer system of claim 27, wherein said computer code configured to cause said processor to determine whether said packet can be forwarded by said egress router is further configured to cause said processor to:

generate an index into an access control list (ACL), wherein

said ACL comprises information regarding whether said packet can be forwarded

by said egress router, and

said index includes said identifier of said tunnel; and

access said ACL using said index.

30.   (Currently Amended) A computer program product comprising:

a first set of instructions, executable on a computer system, configured to assign a

security group identifier (SGI) to a packet;

a second set of instructions, executable on said computer system, configured to classify

said packet based on said SGI; [[and]]

a third set of instructions, executable on said computer system, configured to

determine a routing of said packet, wherein said determining is based on said

SGI;

a fourth set of instructions, executable on said computer system, configured to

forward said packet via said tunnel, if forwarding a packet having said SGI

via said tunnel is permitted; and

computer readable **storage** media, wherein said computer program product is encoded in

said computer readable **storage** media.

31.   (Currently Amended) The computer program product of claim 30, wherein said

second set of instructions is further configured to generate a classification of said packet, and

further comprising:

a ~~third~~ **fifth** set of instructions, executable on said computer system, configured to

determine whether said packet can be sent via a tunnel based on said

classification.

32.-33. (Cancelled)

34.   (Currently Amended) The computer program product of claim 31, wherein said

~~third~~ **fifth** set of instructions comprises:

a first subset of instructions, executable on said computer system, configured to generate

an index, wherein said index comprises said SGI; and

a second subset of instructions, executable on said computer system, configured to use

said index to access an access control list (ACL), wherein said ACL includes

information as to whether said packet can be sent via a tunnel.

35. (Original) The computer program product of claim 34, wherein said information comprises:

an SGI field; and

a tunnel identifier field.

36. **(Currently Amended)** The computer program product of claim 30, further comprising:

a ~~third~~ <u>fifth</u> set of instructions, executable on said computer system, configured to

forward said packet from an ingress router to an egress router via a tunnel.

37. **(Currently Amended)** The computer program product of claim 36, further comprising:

a ~~third~~ <u>sixth</u> set of instructions, executable on said computer system, configured to

receive said packet at said egress router; and

a ~~fourth~~ <u>seventh</u> set of instructions, executable on said computer system, configured to

determine whether said packet can be forwarded by said egress router based on

said SGI.

38. **(Currently Amended)** The computer program product of claim 37, wherein said ~~fourth~~ <u>seventh</u> set of instructions comprises:

a first subset of instructions, executable on said computer system, configured to

determine whether said packet can be forwarded by said egress router based on

said SGI, a destination of said packet and an identifier of said tunnel.

39. **(Currently Amended)** The computer program product of claim 37, wherein said ~~fourth~~ <u>seventh</u> set of instructions comprises:

a first subset of instructions, executable on said computer system, configured to generate

an index into an access control list (ACL), wherein

said ACL comprises information regarding whether said packet can be forwarded

by said egress router, and

said index includes said identifier of said tunnel; and

a second subset of instructions, executable on said computer system, configured to access
said ACL using said index.

40.   (**Currently Amended**) An apparatus comprising:

means for assigning a security group identifier (SGI) to a packet; [[and]]

means for classifying said packet based on said SGI;

**means for determining a routing of said packet, wherein said means for determining
is configured to use said SGI in determining said routing; and**

**means for forwarding said packet via a tunnel identified by said routing, if
forwarding a packet having said SGI via said tunnel is permitted.**

41.   (Original) The apparatus of claim 40, further comprising:

means for determining whether said packet can be sent via a tunnel on based a result
generated by said means for classifying said packet.

42.   (**Cancelled**)

43.   (**Currently Amended**) The apparatus of claim [[42]] 41, further comprising:

means for forwarding said packet via said tunnel, ~~operable~~ **wherein said means for
forwarding is configured to forward said packet via said tunnel** if forwarding
a packet having said SGI via said tunnel is permitted.

44.   (Original) The apparatus of claim 41, wherein said determining comprises:

means for generating an index, wherein said index comprises said SGI; and

means for using said index to access an access control list (ACL), wherein said ACL
includes information as to whether said packet can be sent via a tunnel.

45.   (Original) The apparatus of claim 44, wherein said information comprises:

an SGI field; and

a tunnel identifier field.

46.   (Currently Amended) The apparatus of claim 40, ~~further comprising:~~ **wherein said** means for forwarding said packet **is configured to forward said packet** from an ingress router to an egress router via [[a]] **said** tunnel.

47.   (Original) The apparatus of claim 46, further comprising:

means for receiving said packet at said egress router; and

means for determining whether said packet can be forwarded by said egress router based on said SGI.

48.   (Original) The apparatus of claim 47, wherein said means for determining whether said packet can be forwarded further comprises:

means for determining whether said packet can be forwarded by said egress router based on said SGI, a destination of said packet and an identifier of said tunnel.

49.   (Original) The apparatus of claim 47, wherein said means for determining whether said packet can be forwarded further comprises:

means for generating an index into an access control list (ACL), wherein

said ACL comprises information regarding whether said packet can be forwarded by said egress router, and

said index includes said identifier of said tunnel; and

means for accessing said ACL using said index.